

CLAIMS

1) A forming machine (1) for producing articles (2) of sheet material from flat blanks (2a); the machine (1) comprising powered conveying means (4) for feeding an orderly succession of flat blanks (2a) along a forming path (K), and pressure means (15) for holding said blanks (2a) on the conveying means (4); and being characterized in that said conveying means comprise a roller conveyor (4) comprising two lateral shoulders (5), a number of intermediate rollers (6), each connected to the shoulders (5) to rotate about a respective axis (6a), and synchronous drive means (7) for rotating each of said rollers (6) about its axis (6a); said pressure means (15) being fitted to supporting means (18) comprising a supporting frame (19), and locating and retaining means (24, 28) associated with said shoulders (5) to locate and lock the supporting frame (19) along the forming path (K) in a number of fixed relative reference positions with respect to the shoulders (5).

2) A machine as claimed in Claim 1, characterized by also comprising folding means (52)(53) for folding at least one portion (61)(64) of said blanks (2a); said folding means (52)(53) being carried by respective supporting means (18) identical with the supporting means of said pressure means (15).

3) A machine as claimed in Claim 1, characterized in that said pressure means (15) comprise at least two revolving bodies rotating about respective parallel axes (15a); the axes (6a) of said rollers (6) being equally spaced with a first spacing (P), and the axes (15a) of said revolving bodies being equally spaced with a second spacing (P1) equal to said first spacing (P).

4) A machine as claimed in Claim 3, characterized in that the vertical projection of each of said axes (15a) of said revolving bodies coincides with the axis (6a) of a corresponding said roller (6).

5) A machine as claimed in Claim 1, characterized in that said locating and retaining means (24, 28) comprise, for each said shoulder (5), a row of retaining seats (24) spaced along said shoulder (5); the seats (24) being selectively engaged by a locating projection (30) carried by said frame (19); and releasable fit-gripping means (29, 31) being interposed between said shoulder (5) and said frame (19).

6) A machine as claimed in Claim 5, characterized in that each said retaining seat (24) is symmetrical with respect to a vertical plane (A) containing said axes (6a) (15a).

7) A machine as claimed in Claim 6, characterized in that each said shoulder (5) comprises a respective plate portion (5a); each said retaining seat (24) being defined by a slot formed through said plate portion (5a).

8) A machine as claimed in Claim 7, characterized in that each said slot (24) forms part of a respective keyhole-shaped opening (26).

9) A machine as claimed in Claim 5, characterized in that said fast-fit gripping means (29, 31) comprise, for each said frame (19), at least one respective threaded tie (29) carried by the frame (19); the tie comprising a shank (30) which engages said retaining seat (24), and a head (30a) resting on the shoulder (5); a nut (31) being screwed to the shank (30) to grip the frame (19) and a portion of said shoulder (5) together.

10) A machine as claimed in Claim 2, characterized in that said pressure means (15) and said folding means (52)(53) are fitted to respective said frames (19) by a respective first (36) and at least one respective second guide and slide assembly (37) to move independently of one another in two respective directions (36a)(37a) perpendicular to each other, and one of which is parallel to the axes (6a) of said rollers (6); locking means (43)(49) being associated with each guide

and slide assembly to lock said pressure means (15) and said folding means (52)(53) releasably at any points over said roller conveyor (4).

11) A machine as claimed in Claim 10, characterized in that each said second guide and slide assembly (37) comprises a slide defined by a beam (48) from which the relative pressure means (15)/folding means (52)(53) hang.

12) A machine as claimed in Claim 11, characterized in that respective adjustable fastening means (51) are interposed between said beam (48) and said pressure means (15)/folding means (52)(53).

13) A machine as claimed in Claim 10, characterized in that the slide of each said first guide and slide assembly comprises a C-shaped fastening jaw (38) which fits laterally to a cross member (21) of the relative said frame (19); screw locking means (43) being interposed between the fastening jaw (38) and said cross member (21).

14) A machine as claimed in Claim 1, characterized in that each said frame (19) is a gantry-type frame, and comprises two uprights (20) connected to said shoulders (5), a cross member (21) separate from said uprights (20), and fast-fit connecting means (34, 34a) interposed between said cross member (21) and said uprights (20); said fast-fit connecting means (34, 34a) comprising retaining means (34), and elastic

means (34a) acting in opposition to said retaining means (34) to move the cross member (21) away from the uprights (20) and from the roller conveyor (4).

15) A machine as claimed in Claim 14, characterized in that said retaining means comprise a toggle locking device (34).

16) A machine as claimed in Claim 1, characterized in that said synchronous drive means comprise a chain (9) powered by a single electric motor (8); and, for each of said rollers (6), a toothed wheel (11) fitted to the roller (6) and meshing with said chain (9).

17) A machine as claimed in Claim 1, characterized by comprising a single angular position transducer (65) connected to one of said rollers (6).